

Multi-Function Devices

Sub Title

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What is a multi-function device? The commonly accepted definition, from the Multi-function Products Association, is "Office equipment for paper management connected to a PC or network that handles two or more of the following functions: printing, scanning, copying, or faxing."

Multi-function devices (MFD) (also called multi-function peripherals or all-in-one devices) tend to be segmented into categories such as:

Digital copiers digitize the document image rather than exposing the mechanism to an optical image of the original. Of course they copy, but they can also store documents such as forms for later printing. When connected to a LAN, these scanners provide features (sometimes optional) to generate Adobe PDF, fax, or email documents and store images to user-specific directories on file servers.

Fax machines that connect to a PC function as both an incoming and an outgoing fax server, as well as a printer and a scanner. They can also be used stand-alone as a fax machine or copier.

Printer/Scanner combinations are variations on the digital copier approach which ties a scanning unit onto a printer. With such a variety of configurations, MFD solutions differ in capabilities, from bare bones to technically sophisticated. This makes it impossible to make flat statements that apply to all options. One also observes that over time there has been a trend to make them more capable.

In all of these combinations, space is saved and multiple business needs are addressed with one unit, usually at a saving in cost. While these solutions may not always compete with "best of breed" or dedicated production hardware solutions, for many organizations, the compromises are very acceptable.

A common feature of all of the configurations is the creation of a digital image, making these devices ideal for capturing documents across an organization, particularly in non-production situations. In many situations the production of paper can be reduced: incoming faxes can be managed as images and processed without having to be printed. Rather than printing outbound fax documents and then loading them into a fax, they can be directed to the MFD and sent at the appropriate time. Incoming paper can be captured into content management systems and workflows at the point of arrival.

Since most of these devices do not have displays capable of displaying a captured image, some tool must be used if it is necessary to review and/or process it in any way. When the device is connected directly to a PC, software running on it can provide these functions. When the device is network connected, the file is typically emailed or placed in a user-defined directory on a file server, and then examined. The image is then opened up in a tool; if defects need to be addressed, it is a manual activity, possibly involving re-scanning the entire document. For some, the time lost by travel to and from the device can have a significant impact on productivity.

These devices (and the software normally provided with them) typically do not have the image enhancement or flexibility in configuration options that a production scanning solution provides. Most of the production capture solutions now offer support for these devices through distributed capture add-ons, permitting the images to be introduced into a production capture and workflow process identically to those processed using a scan-only device.

The best way to make a decision about applying multifunction peripherals is to perform a comprehensive document management capture and output analysis. The first step is to identify the total requirements for printing, copying,

faxing, and scanning as well as the space available at a location. This is not always easy, since traditionally these functions are distributed between support units, and current usage is often not tracked. Next one should examine how deploying these functions at the location will permit improvement of processes. Can you significantly reduce the time to complete a key business process by introducing one of these devices and offer service and cost benefits sufficient to justify the purchase? Will the combined load cause contention for the device, particularly at critical times? Only after answering such questions can you intelligently estimate the size of the devices you might need, and compare the use of an MFD versus discrete components. Caution: be aware that by consolidating functions into an MFD you are also consolidating your dependency on a single piece of hardware.

I encourage you to consider these devices as a viable option when addressing the multiple document needs of your organization.

Metadata literally means "data that describes other data." While true, that definition isn't very useful. The ISO Records Management standard, (ISO 15489), defines metadata as "Data describing context, content, and structure of documents and records and their management through time." Metadata not only includes information in a document, but any related information. For example, imaging metadata would include some of the data on a form, but also information about its digital conversion, the image format, and handling of the image. By contrast, not all information captured from a document will be held as metadata or used to index the item. Metadata is an essential part of any information management program, as it is the tool for organization and management. Metadata is particularly useful when collected into electronic catalogs, because it supports quick, complete, and accurate location of relevant items. In addition to facilitating the location and management of electronic documents, metadata:

- Serves as the mechanism for documenting the lifecycle of information, including creation, usage, and disposition.
- Preserves the context and history of a particular piece of information.
- Documents how that object behaves, its function, use, and its relationships to other information objects.

One way to categorize metadata is:

- Descriptive: Information describing the content used for search and retrieval.
- Structural: Information that ties this item with others, such as pages in a book, or the documents in a case folder.
- Administrative: Information used to manage and control access to the item.

An alternative set of three categories based upon document lifecycles is:

- Content, which is based upon the information in the document and the form of the content. This also involves if needed, recording the location of the related item.
- Records management metadata, covering the classification, maintenance, and preservation of the document.
- Usage metadata, recording the capture, access, review, utilization, and disposition.

A primary use of metadata is to permit locating a specific item and then its retrieval and display. Metadata is also used to ensure the authenticity, reliability, integrity, and usability of a document as a record. Metadata can be stored within a document (e.g., email messages with descriptive headers) or stored separately (e.g., in an external catalog). An advantage of storing metadata with the record is that when the record is copied or moved, the metadata moves with it. When the record is deleted, the metadata is deleted as well. A significant disadvantage of only having embedded metadata is that all items need to be examined to satisfy a query. Another is that changes require changing the document, potentially violating trustworthiness. The advantage of storing metadata separately in an electronic catalog, usually a database, is that it makes searching and maintenance more efficient. A disadvantage of this method is that the linkage between an item and its metadata could be lost. To prevent this, mechanisms need to be created to ensure that the associated metadata and the linkage with the related document are maintained. If approaches are used, you will need to synchronize the two sets as changes occur. Whenever a document or record is first identified, a number of initial metadata will be associated. In ECM this tends to be the indexing values, as well as the internal data maintained by the ECMS. After the initial acquisition of a document and its metadata, additional metadata elements will accrue as changes in the logical and physical structure and technical attributes of the record occur, to describe new contexts in which the record is used, and to document new relationships with other documents or aggregations. This would involve usage of the item in other documents and auditing information. There are a number of metadata standards in use. The Dublin Core Metadata Initiative has released a number of recommendations focused on standardizing the structure and vocabularies used across a number of applications. ISO 15836:2003 and ANSI/NISO Z39.85 - 2001 represent integration of these recommendations into formal standards. Many industry associations have produced standards for the information associated with their documents. Records management standards and best practices, such as ISO 15489, ISO/DIS 23081-1, and U.S. DOD 5015.2 as well as the European Model Requirements (MoReq) have identified metadata information of particular interest to records managers. They specifically require metadata to be captured and maintained by compliant records management systems. Metadata is nothing arcane, but something we use every day. Bernard Chester (bchester@imergeconsult.com) is a consultant on ECM who focuses on implementation and integration issues. He is a principal with IMERGE Consulting (www.imergeconsult.com), an independent ECM consulting firm.